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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,428	08/07/2001	Lei Wu	4718420005000	3614

25225 7590 01/03/2007  
MORRISON & FOERSTER LLP  
12531 HIGH BLUFF DRIVE  
SUITE 100  
SAN DIEGO, CA 92130-2040

EXAMINER
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CHEU, CHANGHWA J

ART UNIT	PAPER NUMBER
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1641

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/03/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

09/924,428

Applicant(s)

WU ET AL.

Examiner

Jacob Cheu

Art Unit

1641

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16-20, 25-31, 33-93, 95-121 is/are pending in the application.
- 4a) Of the above claim(s) 35-55, 58-66, 69-91 and 96-114 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14, 16-20, 25-31, 33, 34, 56, 57, 67, 68, 92, 93, 95 and 115-121 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Applicant's amendment filed on 10/15/2006 has been received and entered into record and considered.

The following information provided in the amendment affects the instant application:

1. Claims 15, 21-24, 32 and 94 are cancelled.
2. Claims 120-121 are added to the instant application.
3. Claims 35-55, 58-66, 69-91 and 96-114 are withdrawn from further consideration.
4. Currently claims 1-14, 16-20, 25-31, 33, 34, 56, 57, 67, 68, 92, 93, 95 and 115-121 are under examination.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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3. Claims 1-11, 13, 16-20, 25-31, 34, 67-68, 92-93, 95, 115-121 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaye et al. in view of Wu et al. (US 6221677).

Kaye et al. teach a microdevice for combinational library screening. Kaye et al. teach that the microdevice comprises a substrate, a photorecognizing coding pattern on said substrate, and a binding partner for binding target molecule of interest (See page 6, line 5-15; page 2, line 1-5; Figure 2 and 5). It is noted that the photorecognizable code taught by Kaye et al. consists of different shapes and forms, including hollows, grooves, or notches, which are holes not penetrating through the entire depth of the substrate (See page 6, line 5-15; Figure 2 and 5; *Particular Figure 2, second example, holes not penetrated through the substrate*)(emphasis added). With respect to the dimensions, the microdevice taught by Kaye et al. can be within from 1 to 500 microns ranges (See page 9, last paragraph). The microdevice of Kaye et al. does not comprise an anodized metal surface layer (See page 10-15; Figure 2-5). Kaye et al. also teach using the microdevice to test the ability of library elements or compounds to modulate activity in biological systems, including cells, enzymes, receptors (See page 19, line 1-5). However, Kaye et al. do not disclose the features of having a binding partner, e.g. antibody, capable of binding to a moiety to be manipulated and with magnetic material thereon.

Wu et al. teach immobilizing binding partner capable of being manipulated on the beads having magnetic materials (See Figure 4). The binding of the analyte can be separated or isolated by magnetic force. Supra.

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to have provided Kaye et al. with the binding partner, such as antibody, immobilized on a magnetic beads in order to improve efficiency of separation or isolation of the modulated target molecules.

With respect to claim 2, Kaye et al. teach that the material for microdevice can be of glass, rubber (See page 5, line 24-26).

With respect to claim 3, 11, Kaye et al. also teach use of silicon dioxide or a metal layer for the substrate (See Abstract).

With respect to claim 4, the microdevice taught by Kaye et al is hydrophilic or hydrophobic (See Figure 2-5; page 2-3).

With respect to claims 5, 116, the shape of the microdevice can be different, such as rectangle or square (See Figure 2).

With respect to claims 6, 117-119, Kaye et al. teach that the thickness of the substrate can be the range between 5-50 microns (See page 9, line 21-25; page 21, line 17-21).

With respect to claims 7-10, Kaye et al. teach that the shape of the microdevice can be varied, and the size can be from 1 to 500 microns (See page 9, line 22-25).

With respect to claims 13, 28-31, Kaye et al. also teach using electromagnetic materials for facilitation of the binding by physical force, such as magnetic interaction (See page 15, line 15-17).

With respect to claims 17-19, Kaye et al. teach the photorecognizable code on the microdevice can be of a plurality of holes on the substrate (See Figure 2; page 6, line 9-10).

With respect to claims 19-20, Kaye et al. teach lithographical micromachining for manufacturing the microdevice (See page 12, line 13-15; page 11, line 12-13).

With respect to claims 25-27, the antibodies taught by Wu et al. can be manipulated, e.g. binding to the analyte. Surpa.

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With respect to claim 34, Kaye teach using fluorescent or phosphorescent materials substance for detection purpose (See page 15, line 20).

With respect to claims 56-57, Kaye et al. teach that the microdevice can be manipulated on different layer(s) through micromachining or photolithographic (See page 12-13).

With respect to claim 93, the microdevice comprises a metal layer and a non-metal layer (See Abstract; page 10-12).

With respect to claim 115, the microdevice taught by Kaye et al. does not comprise a microprocessor (See Figure 2).

4. Claims 12 and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Kaye et al. in view of Wu et al, and further in view of Zhou et al. (US 6355491).

Both Kaye and Wu et al. references have been discussed but are silent in teaching use of aluminum layer or nickel alloy.

Zhou et al. teach a biochip having arrays of individual addressable microelectromagnetic units. Zhou et al. teach different materials, such as glass, silicon dioxide, *aluminum*, silicon dioxide or *nickel alloy* layers (Col. 9, line 52 to Col. 10, line 12; Col. 14, line 60-65). Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to have provided Kaye and Wu et al. with the options of different substrate materials, e.g. aluminum or nickel alloy as taught by Zhou et al. since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for optimization of the result. In re Boesch, 617 F.2d 272; In re Leshin, 125 USPQ 416.

5. Claims 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaye et al. in view of Wu, and further in view of Cattell (US 6180351).

Both Kaye and Wu et al. references have been discussed but are silent in teaching use of a detectable marker, such as fluorescent label for detection purpose.

Cattell et al. teach an addressable array, such as DNA detection. Cattell et al. teach use of fluorescent makers for increase detection efficiency (Col. 1, line 22-25). Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to have provided Kaye and Wu et al. with the fluorescent maker as taught by Cattell et al. to increase detection sensitivity since it is well known in the art to use fluorescent label marker for detection purpose.

6. Claims 56-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaye et al. in view of Wu, and further in view of Zhou et al.

Both Kaye and Wu et al. references have been discussed but are silent in teaching use of chips for analysis.

Zhou et al. teach a biochip to detect manipulation of micro-particles and biological materials for economy and time-saving purposes (Col. 2, line 55-65).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to have provided both Kaye and Wu et al. with the chip taught by Zhou et al. in order for a time-saving and cost-saving microanalysis.

#### ***Response to Applicant's Arguments***

7. Applicant's arguments with respect to claims 1-11, 13, 16-20, 25-31, 34, 67-68, 92-93, 95, 115-119 have been considered but are moot in view of the new ground(s) of rejection.

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*35 USC 102 (b) Kaye et al. reference*

Applicant argues that the Kaye et al. reference lacks the feature of magnetic material and the binding partner on the microdevice.

Examiner agrees. However the amended claims still rendered obviousness rejections under Kaye and Wu et al. references as set forth in this Office Action. Particularly, Wu et al. reference remedy the deficiency.

8. No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Cheu whose telephone number is 571-272-0814. The examiner can normally be reached on 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

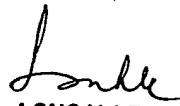
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Jacob Cheu

Examiner

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12/21/2006

  
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